

## ABSTRACT OF THE DISCLOSURE

An active inductor includes bipolar transistors T1, T2, T3 and TD (TD being arranged in diode), where T1's emitter is connected to an output port and to T2's collector. T2's base is connected to a first voltage line and between two connected capacitors. T2's emitter is connected to T3's collector. An end of one capacitor is connected to T1's base and to a second voltage line. An end of the other capacitor is connected to T3's emitter and to a third voltage line. T1's collector is connected to a fourth voltage line and to TM's collector, which is connected to TM's base. TM's emitter is electrically connected to T3's base. Preferably, the transistors T1-T3 and TD are Silicon based, and the active inductor is fabricated on a single substrate comprising Silicon. The active inductor is incorporated into adaptive oscillators and amplifiers and an improved transceiver.